MAFCS

3695

17/90

QUEENSBURY FARM, SUTTON BENGER, WILTS

AGRICULTURAL LAND CLASSIFICATION

REPORT OF SURVEY

1. Introduction:

In July 1990, a detailed Agricultural Land Classification (ALC) Survey and assessment of site physical characteristics was carried out over 45 ha of land at Queensbury Farm, off Sutton Lane at Sutton Benger, Wiltshire. The survey was in response to an application by Hills Aggregates Ltd to extract sand and gravel from the site with subsequent restoration to agriculture.

The field work was conducted by the Resource Planning Group at an approximate observation density of one auger boring per hectare. A total of 63 borings and 4 soil pits were examined.

2. Agricultural Land Classification (ALC):

2.1. The ALC provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture. The grading refers to the top 120cm of the profile. The distribution of ALC grades is detailed below and illustrated on the accompanying ALC map at a scale of 1:6,666. The information is accurate at this scale, but any enlargement would be misleading.

Table 1 : Distribution of ALC grades:

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	3.6	8.2	8.3
3A	24.4	55.0	55.5
3B	15.9	35.8	36.2
Non ag	0.6	1.0	-
	44.5	100	100 (43.9 ha)

2.2. Climate:

Estimates of important climatic variables were obtained for the site by interpolation from a 5km grid database in order to assess any overall climatic limitation. The indicative parameters for assessing such a limitation are accumulated temperature (a measure of the relative warmth of a locality) and average annual rainfall (a measure of overall wetness). The results (shown in Table 2) reveal that there is no climatic limitation affecting the site. No local climatic factors affect the grading.

Table 2 : Climatic Interpolation

Grid reference	ST 953785
Height	55
Accumulated temperature (^{o} days)	1475
Average annual rainfall (mm)	739
Field capacity (days)	166
Moisture deficit, wheat (mm)	105
Moisture deficit, potatoes (mm)	97
Overall climatic grade	1

2.3. Grade 2:

There is a small area of land in the south classed as Grade 2. The area in the south is limited by topsoil (HCL) workability. The topsoil textures of these soils (Heavy Clay Loam) imposes a workability limitation, given the prevailing field capacity days (166), and restricts the land to Grade 2. Pit 1 is typical, and shows that these profiles are placed in Wetness Class I.

2.4. Grade 3A:

The central section of the site is downgraded due to a droughtiness limitation caused by the presence of sandy soil textures and increasing stone contents. A sand and gravel matrix is found in these profiles at an average depth of 50cm. Pit 4 is typical of these droughty soils.

2.5. Subgrade 3B

Two areas of this subgrade have been identified.

The northern part of the survey area has been classed as Subgrade 3B, because it suffers a greater droughtiness limitation than the area to the south. The droughty sand and gravel horizon is found higher in the profile at approximately 30cm with only a topsoil horizon above. A clay layer at depth is unable to hold sufficient moisture to reduce the moisture deficit significantly. This northern area does have lighter topsoils (MCL and MZCL) and the soils are naturally calcareous. Pit 3 is typical of these profiles.

A second smaller area of Subgrade 3B exists in the South of the site. Here there is much evidence of wetness from 25cm and the clay subsoils have slowly permeable structures (see Pit 2). There is also an organic horizon found at 50cm but it is of variable depth ranging from 10cm to over 50cm. The area has heavy silty clay loam topsoils. The soils fall into wetness Class 4 and are thus placed into Subgrade 3B for the prevailing FCD level.

3. Soil Resources : Topsoil

The areas referred to can be found on the accompanying Soil Resources map.

"Topsoil" is defined as the organic rich surface horizon. A broad distinction can be made between the medium and heavy topsoil textures which mirror the ALC map units 3B (Unit 1) and 3B with 3A (Units 2, 3 and 4), and these distinct top-soils should be handled separately as they are significantly different in terms of workability. Over the whole site the topsoil is typically 30cm deep.

A total topsoil resource of 131,700 m^3 is available, distributed as shown in Table 3.

Table 3 - Top-soil Resources

Map Unit	Depth	Area	Soils	Volume
1	30cm	13.4 ha	MCL, MZCL	40200m^3
2,3,4	30cm	30.5 ha	HCL, HZCL	91500m^3
				131,700m^3

4. Soil Resources : Subsoil

"Subsoil" is defined as the less organic rich lower horizons.

Unit 1 has no subsoil unlike the rest of the site. Below the topsoil is a loamy sand and gravel matrix which extends to 120cm. This matrix has a stone content of over 70%. Although this is not technically a soil it does make a contribution to the available water in the profile.

Over the majority of the site there are clay subsoils, in Units 2 and 3 to an average depth of 50cm and in Unit 4 to at least 120cm.

In Unit 2 below the clay is a loamy medium sand and gravel matrix with high stone contents over 60%, but this is still considered a soil. This extends to at least 120cm.

Unit 3 has an organic horizon below the upper subsoil clays. This horizon is of variable thickness, below which is another clay horizon. As a result of the variable nature of the organic horizon and the beneficial rather than detrimental effect it would have on the structure of the clays, Unit 3 should be stripped as one soil type from 50cm to 120cm depth.

In Unit 4 there are very few stones and the clay extends to 120cm.

A total subsoil resource of 274,500m^3 is available, the distribution of which is seen in Table 4.

Table 4 - Subsoil Resources

Map Unit	Depth	Area	Soils	Volume
2	30-50cm	24.4ha	C	48800m^3
2	50-120cm	24.4ha	LMS	170800m^3
3	30-120cm	2.5ha	C,Pty L	22500m^3
4	30-120cm	3.6ha	C	32400m^3
				274500m^3

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

Grade 1 – excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 – very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 – good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a – good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b – moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 – poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 – very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports, airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

(i) TEXTURE:-

Soil texture classes are denoted by the following abbreviations (all Upper case*):

S	Sand
LS	Loamy Sand
SL	Sandy Loam
SZL	Sand Silt Loam
ZL	Silt Loam
MZCL	Medium Silty Clay Loam
MCL	Medium Clay Loam
SCL	Sandy Clay Loam
HZCL	Heavy Silty Clay Loam
HCL	Heavy Clay Loam
SC	Sandy Clay
ZC	Silty Clay
C	Clay

For the sand, loamy sand, sandy loam and sandy silt loam classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

F	fine (more than $\frac{2}{3}$ of sand less than 0.2 mm)
C	coarse (more than $\frac{1}{3}$ of sand greater than 0.6 mm)
M	medium (less than $\frac{2}{3}$ fine sand and less than $\frac{1}{3}$ coarse sand)

The sub-divisions of clay loam and silty clay loam classes according to clay content are indicated as follows:-

M	medium (less than 27% clay):
H	heavy (27-35% clay)

Other possible texture classes include:

P	Peat
SP	Sandy Peat
LP	Loamy Peat
PL	Peaty Loam
PS	Peaty Sand
MZ	Marine Light Silts

* There are two exceptions to the Upper Case rule:-

- The prefix "**Calc**" is used to identify naturally calcareous soils containing more than 1% Calcium Carbonate
- For organic mineral soils, the texture of the mineral fraction is prefixed by "**Org**".

(ii) STRUCTURE:-

Nature and size of structural units are denoted by the following abbreviations:

SAB	Subangular Blocky
AB	Angular Blocky
P	Prismatic
	(single grain, granular and platy are not abbreviated)
F	Fine
M	Medium
C	Coarse
VC	Very Coarse

eg Weak **MSAB** = Weakly developed medium subangular blocky

(iii) OTHER

f	few	=	less than 2% of the matrix or surface described
c	commom	=	2-20% of the matrix or surface described
m	many	=	20-40% of the matrix or surface described
vm	very many	=	+40% of the matrix or surface described
f	faint	=	indistinct mottles, evident only on close examination
d	disinct	=	although not striking, the mottles are readily seen
p	prominent	=	the mottles are conspicuous, and the mottling is one of the outstanding features of the horizon
gm	grey mottling		
om	ochreous mottling		

eg **cdom** = common distinct ochreous mottles

ppf =	pale ped faces
mn =	manganese
st =	stones 6 cm
sst =	stones 2-6 cm
vsst=	stones 2 cm
WC =	Wetness Class (use Roman numerals, eg WC IV)
SPL =	Slowly Permeable Layer
WT =	Water Table
I =	Impenetrable if used in Depth Column
IMP =	Impenetrable if used in soil profile notes

(**IMP 2 x 40 cm** = 2 additional borings, both impenetrable at 40 cm)

ASP = Auger Sample Point

AGRICULTURAL LAND CLASSIFICATION

Queensbury Farm, Sutton Benger SOIL PROFILE DESCRIPTION

Date of Survey 29.6.90

NO	TEXTURE	COLOUR	DEPTH (CM)	SOIL PROFILE NOTES	TOPOGRAPHY NOTES
1	MCL	10YR44	0-30		
	MCL	10YR46	30-50	fMn	
	HCL	10YR46	50-60	fMn	
	C	10YR56	60-80+	fMn 10% calc vsst WCI	
	-				
2	MCL	10YR44	0-30		
	HCL	10YR46	30-55	fMn	
	C	10YR44	55-65	fMn fdom	
	C	10YR44	65-80+	cMn cdom	
3	MCL	10YR43	0-25	fMn	
	MCL	10YR45	25-50		
	HCL	10YR44	50-70	fMn	
	C	10YR44	70-80+	fMn	
4	MCL	10YR43	0-30		
	HCL	10YR43	30-35		
	C	10YR43	35-50	weathering colours vsst	
	C	10YR44	50-55	5% calc fdom	
			I	calc material	
5	MCL	10YR43	0-30	fMn	
	C	10YR44	30-40	cdom cMn 10% calc	
			I	calc material	
6	MSZL	10YR43	0-35		
	MCL	10YR44	35-40	2% calc 5% sst	
			I		
7	MCL	10YR43	0-28		
	HCL	10YR46	28-40	fMn fdom	
			I	calc stones	
8	MCL	10YR43	0-28		
	HCL	10YR46	26-45	fMn few weathering colours	
			45-50	5% calc material	
			I		
9	MCL	10YR43	0-30		
	HCL	10YR44	30-40	cMn cdom	

AGRICULTURAL LAND CLASSIFICATION

SOIL PROFILE DESCRIPTION

Date of Survey

NO	TEXTURE	COLOUR	DEPTH (CM)	SOIL PROFILE NOTES	TOPOGRAPHY NOTES
10	MCL	10YR43	0-28		
	HCL	10YR46	28-40		
	HCL	10YR46	40-50	cMn fdom	
	C	10YR46	50-60	cMn cdom WC3	
			I		
11	MCL	10YR43	0-30		
	HCL	10YR44	30-40	fMn	
	C	10YR46	40-70	cdom fMn	
			I	calc stones WC3	
12	MCL	10YR43	0-28		
	HCL	10YR56	28-45	cMn	
			I	calc stones	
13	MCL	10YR43	0-25		
			I. x3	stones	
14	MCL	10YR44	0-28		
	HCL	10YR46	28-40	fMn	
			I	stones	
15	MCL	10YR44	0-32		
	HCL	10YR46	32-50	fMn	
	MCL	10YR46	50-60		
	HCL	10YR46	60-70		
			I	stones	
16	MCL	10YR43	0-35		
	MCL	10YR46	35-45	fMn	
	HCL	10YR46	45-60	cMn fdom	
			I	calc stones	
17	MCL	10YR43	0-30		
	C	10YR54	30-45	cdogm cMn ppf	
	SC	10YR58	45-50	cdogm	
	SL	10YR58	50-80	20% calc sst	
	SL	10YR58	80-100+	vsst gritty WC 4	

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SOIL PROFILE DESCRIPTION

Date of Survey

NO	TEXTURE	COLOUR	DEPTH (CM)	SOIL PROFILE NOTES	TOPOGRAPHY NOTES
18	MCL	10YR43	0-30		
	HCL	10YR45	30-55	fMn	
	C	10YR46	55-60	fMn fdom	
			I		
19	MCL	10YR43	0-30		
	HCL	10YR44	30-45	fMn	
	HCL	10YR44	45-50	fdom fMn	
			I	stones	
20	MZCL	10YR43	0-28		
	HCL	10YR56	28-35	cMn	
	SC	10YR58	35-55	vcMn cdom WC3	
			I		
21	MZCL	10YR53	0-30		
	HZCL	10YR56	30-40	fMn	
	HCL	10YR56	40-60	vcMn cdom	
			I	stones	
22	MZCL	10YR43	0-30		
	MZCL	10YR44	30-35		
	HCL	10YR46	35-40		
	SCL	10YR56	40-45	sst	
			I		
23	MZCL	10YR43	0-30		
	HCL	10YR46	30-45	calc weathering colours	
			I	calc stones	
24	HZCL	10YR44	0-25		
	C	10YR46	25-45	vcMn from 30 cm, ppf-10YR53, cdom	
	SCL	10YR46	45-70	gritty, sst WC 4	
			I		

SOIL PROFILE DESCRIPTION

Date of Survey

NO	TEXTURE	COLOUR	DEPTH (CM)	SOIL PROFILE NOTES	TOPOGRAPHY NOTES
25	MZCL	10YR44	0-30		
	HZCL	10YR46	30-40	cMn sst fdom	
	HCL	10YR46	40-70	cMn cdom sst	
			I	calc stones	
26	MZCL	10YR43	0-25		
	HCL	10YR56	25-40	cMn cdom	
	C	10YR56	40-60	cMn cdom	
			I		
27	MCL	10YR43	0-25		
	HCL	10YR46	25-45	fMn vsst	
	C	10YR46	45-55	cMn cdom vsst ped faces 10YR54	
	C	10YR53	55-65	cdom SPL	
	C	10YR53	65-75	sst flints WC3	
			I		
28	MZCL	10YR43	0-25		
	SZL/MCL	10YR46	25-35		
			I x 2		
29	MZCL	10YR43	0-25		
			I x 2		
30	MZCL	10YR43	0-25		
	ZC	10YR46	25-30	vsst cdom cMn	
			I		
31	MZCL	10YR43	0-30		
			I x 3		
32	MZCL	10YR43	0-32		
	HCL	10YR46	32-45	fMn vsst	
	SCL	10YR56	45-60		
			I	stones	

AGRICULTURAL LAND CLASSIFICATION

SOIL PROFILE DESCRIPTION

Date of Survey

NO	TEXTURE	COLOUR	DEPTH (CM)	SOIL PROFILE NOTES	TOPOGRAPHY NOTES
33	MCL	10YR43	0-35		
	C	10YR44	35-60	cMn fdom	
			I	calc stones	
34	MZCL	10YR43	0-30		
	HCL	10YR44	30-35	sst	
			I		
35	MCL	10YR43	0-20		
			I x 4		
36	M/HCL	10YR43	0-28		
	HCL	10YR46	28-45	fMn	
			I		
37	MCL	10YR43	0-25		
	HCL	10YR46	25-45	cMn vsst	
			I, 30cm		
38	MZCL	10YR43	0-35		
	MCL	10YR43	35-40	vsst	
			I	stones	
39	MCL	10YR43	0-25	sst	
			I x 2	stones	
40	MCL	10YR43	0-30	sst	
	HCL	10YR44	30-35	sst	
			I x 2	stones	
41	MZCL	10YR43	0-30	sst	
			I x 2		
42	MZCL	10YR42	0-15		
	C	10YR53	15-40	cdom	
	SCL to SL	10YR52	40-55	cdogm	
	Pty L	10YR21	55-100+	cdogm cMn WC4	

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SOIL PROFILE DESCRIPTION

Date of Survey

NO	TEXTURE	COLOUR	DEPTH (CM)	SOIL PROFILE NOTES	TOPOGRAPHY NOTES
43	MZCL	10YR42	0-25		
	C	10YR42	25-35	cdom	
	C	10YR32	35-48	cdogm fMn	
	C	10YR41	48-70	cdogm	
	SL	10YR62	70-100	cdogm gritty	
	C	10YR62	100+	sst + grit WC4	
44	MZCL	10YR45	0-25		
	ZC	10YR54	25-40	cdom	
	C	10YR54	40-50	vcMn cdogm	
	C	10YR54	50-60	pockets of sand, cdogm cMn	
			I	stone	
45	MCL	10YR43	0-25		
	HCL	10YR43	25-30	calc material sst gritty	
			I		
46	No peaty horizon in top 80, 70-80 SCL				
47	No peaty horizon in top 90				
48	Peaty at 45				
49	Organis at 45 60-80+ SCL gritty				
50	Org at 45-60 60+ clay				
51	Org at 50				
52	Org at 45 60+ clay				
53	No organic layer 70-90+ pockets of SCL with sst and clay				
54	30-45 Org 70+ SCL with pockets of sand and stones				
55	50-70 Org 70+ SCL				

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SOIL PROFILE DESCRIPTION

Date of Survey

NO	TEXTURE	COLOUR	DEPTH (CM)	SOIL PROFILE NOTES	TOPOGRAPHY NOTES
56	HCL	10YR43	0-30		
	SCL	10YR46	30-35		
			I	stones	
57	HCL	10YR43	0-20		
	C	10YR56	20-25		
			I x 2		
58	HCL	10YR43	0-25		
	C	10YR56	25-30		
			I		
59	HCL	10YR43	0-35		
	C	10YR44	35-70+	weathering colours fMn	
60	HCL	10YR43	0-30		
	C	10YR44	30-60+	weathering colours (∴ as pit 1)	
61	HCL	10YR43	0-35		
			I		
62	HCL	10YR43	0-35	few stones	
			I		
63	HCL	10YR43	0-25		
	C	10YR46	25-60+	weathering colours, weathered	
				stones, gritty (∴ as pit 4)	

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Queensbury Farm Sutton Benger	: 1	0°	Arable	Av Rainfall :- 739 ATO :- 1475 FC Days :- 166 Climatic grade:- 1	Valley Gravels
	DATE 29/6/90	GRID REFERENCE ST 951778			

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	34	10YR43	HCL	-	-		> .5%			Many	x	Few	Clear
2	70+	10YR44	C	-	cdom	WCSab	> .5%	Moderate	V Firm	Common	x	Many	

Pit dug to 70 cm augered to 100 cm

Depth to Slowly Permeable Horizon :- None

Wetness Class :- WC I

Wetness Grade :- 2

RPG0023/WJC

Available Water Wheat :- 143

Potatoes :-

Moisture Deficit Wheat :- 105

Potatoes :-

Moisture Balance Wheat :- 38

Potatoes :-

Droughtiness Grade :- 1

Final ALC Grade :- 2

Main Limiting Factor(s) :- Workability

Remarks :-

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Queensbury Farm Sutton Benger	2 DATE 5/7/90	0° GRID REFERENCE ST 953779	Grassland	Av Rainfall :- 739 ATO :-1475 FC Days :- 166 Climatic grade:- 1	Valley Gravels

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	10	10YR43	HZCL	-	cfom	wdm Sab	> .5	Good	Friable	Many	x	None	Wavy Clear
2	18	10YR43	HCL	-	cfom	wdm Sab	> .5	Good	Friable	Many	x	None	abrupt smooth
3	38	10YR54 10YR53	C	-	vcdogm	md mab	< .5	Poor	V Firm	Common	x	None	Clear wavy
4	64	10YR32	C	-	cdom	sdcp	< .5	Poor	V Firm at least	Common around peds	x	None	Clear wavy
5	90	10YR21	Pt	-	cdom	wdc Sab	< .5		Friable	-	x		Clear Smooth
6	120+	10YR61	C	-	cdgm	too wet			Friable	-	x		
	Pit dug to 80 cm augered to 120												

Depth to Slowly Permeable Horizon :- 38

Wetness Class :- 4

Wetness Grade :- 3B

RPG0023/WJC

Available Water Wheat :- 176

Potatoes :-

Moisture Deficit Wheat :- 105

Potatoes :-

Moisture Balance Wheat :- 71

Potatoes :-

Droughtiness Grade :- 1

Final ALC Grade :- 3B

Main Limiting Factor(s) :- Wetness

Remarks :-

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE	Av Rainfall :- 739	PARENT MATERIAL
Queensbury Farm Sutton Benger	3	0°	Arable	ATO :-1475 FC Days :- 166 Climatic grade:- 1	Valley Gravels
	DATE 5/7/90	GRID REFERENCE ST 955784			

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	15	10YR43	MCL	1% sieve 5% < 2 cm	-	wdm Sab	> .5	Good	Friable	Common	✓	-	abrupt smooth
2	34	10YR56	LMS	5% > 2 cm 64% < 2 cm V gritty lab	-	Apedal single grain	> .5	Moderate	Loose	Few	✓	fmn	abrupt smooth
3	43	10YR62	LMS	5% > 2 cm 64% < 2 cm	-	single grain	> .5	Moderate	Loose	Few	✓	Cmn	abrupt smooth
4	50	10YR56	LMS	5% > 2 cm 64% < 2 cm	-	single grain	> .5	Moderate	Loose	-	✓	Cmn	abrupt smooth
5	60	10YR62	LMS	5% > 2 cm 68% < 2 cm	-	single grain	> .5	Moderate	Loose	-	✓	Cmn	abrupt smooth
6	75	10YR56	LMS	10% > 2 cm sieve 68% < 2 cm lab	-	single grain	> .5	Moderate	Loose	-	✓	-	abrupt smooth
7	100+	10YR52	C	10% > 2 cm visual pockets of horizon 6	cdom	Difficult to assess because of stone content tending to wdm Sab > .5			Firm	-		None	

Depth to Slowly Permeable Horizon :- None

Wetness Class :- WC I

Wetness Grade :- 1

RPG0023/WJC

Available Water Wheat :- 41

Potatoes :-

Moisture Deficit Wheat :- 105

Potatoes :-

Moisture Balance Wheat :- - 64

Potatoes :-

Droughtiness Grade :- 4

Final ALC Grade :- 4 (see below)

Main Limiting Factor(s) :- Droughtiness

Remarks :- Although the soil pit is 4 the unit in which it falls has deeper topsoils and is graded 3B

SITE NAME	PROFILE NUMBER	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Queensbury Farm Sutton Benger	4 DATE 5/7/90	0° GRID REFERENCE ST 954782	Arable	Av Rainfall :- 739 ATO :- 1475 FC Days :- 166 Climatic grade:- 1	Valley Gravels

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	15	10YR43	HZCL	-	-	wdm Sab	> .5%	Good	Friable	Common	x	-	Clear
2	28	10YR54	C	-	cfogm	mdc Sab	> .5%	Moderate	Firm	Common		-	Clear
3	35	10YR56	C	Gritty	cfogm	wdm Sab	> .5%	Good	Friable	Common		Few	Clear
4	55	10YR58	LMS	5% sieve 47% < 2 cm lab	cdom	wdc Sab	> .5%	Good	Friable	-	√	Common	
5	100+	10YR46	LMS	10% sieve gritty 50+% < 2 cm lab		Too stoney/gritty to assess				-	√		
	Pit dug to 100 cm												

Depth to Slowly Permeable Horizon :- None

Wetness Class :- I

Wetness Grade :- 2

RPG0023/WJC

Available Water Wheat :- 97.2

Potatoes :-

Moisture Deficit Wheat :- 105

Potatoes :-

Moisture Balance Wheat :- - 7.8

Potatoes :-

Droughtiness Grade :- 3A

Final ALC Grade :- 3A

Main Limiting Factor(s) :- droughtiness

Remarks :-